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LaSalle County Station
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Exelon Nuclear

January 23, 2004

10 CFR 50.73

United States Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

LaSalle County Station, Unit 1
Facility Operating License Nos. NPF-11
NRC Docket No. 50-373

Subject: Licensee Event Report

In accordance with 10 CFR 50.73 (a)(2)(iv)(A), Exelon Generation Company, (EGC), LLC, is submitting Licensee Event Report Number 03-005-00, Docket No. 050-373.

Should you have any questions concerning this letter, please contact Mr. Glen Kaegi, Regulatory Assurance Manager, at (815) 415-2800.

Respectfully,

Susan Landahl

Susan Landahl
Plant Manager
LaSalle County Station

Attachment: Licensee Event Report

cc: Regional Administrator - NRC Region III
NRC Senior Resident Inspector - LaSalle County Station

IE22

NRC FORM 366 (7-2001) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104 EXPIRES 7-31-2004

Estimated burden per response to comply with this mandatory information collection request: 50 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U. S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and by internet e:mail to bjs1@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NOEB-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
LaSalle County Station, Unit 1	05000373	1 of 4

4. TITLE: Manual Reactor Scram on Low Reactor Vessel Water Level Due to Stuck Open Feedwater Pump Discharge Check Valve

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
11	27	2003	2003	- 005 -	00	01	23	04	FACILITY NAME	DOCKET NUMBER

9. OPERATING MODE	1
10. POWER LEVEL	100

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)

☐ 20.2201(b)	☐ 20.2203(a)(3)(ii)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(ix)(A)
☐ 20.2201(d)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(x)
☐ 20.2203(a)(1)	☐ 50.36(c)(1)(i)(A)	☒ 50.73(a)(2)(iv)(A)	☐ 73.71(a)(4)
☐ 20.2203(a)(2)(i)	☐ 50.36(c)(1)(ii)(A)	☐ 50.73(a)(2)(v)(A)	☐ 73.71(a)(5)
☐ 20.2203(a)(2)(ii)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(v)(B)	☐ OTHER
☐ 20.2203(a)(2)(iii)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(C)	Specify in Abstract below or in NRC Form 366A
☐ 20.2203(a)(2)(iv)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(D)	
☐ 20.2203(a)(2)(v)	☐ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(vii)	
☐ 20.2203(a)(2)(vi)	☐ 50.73(a)(2)(i)(C)	☐ 50.73(a)(2)(viii)(A)	
☐ 20.2203(a)(3)(i)	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(B)	

12. LICENSEE CONTACT FOR THIS LER

NAME	TELEPHONE NUMBER (Include Area Code)
Michael Musser, Mechanical Specialist	(815) 415-2822

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX
B	SJ	V	C684	Y					

14. SUPPLEMENTAL REPORT EXPECTED		15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR
☐ YES (If yes, complete EXPECTED SUBMISSION DATE)	☒ NO				

16. ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines)

On November 27, 2003, at 0052 hours, while swapping from the 1A Turbine Driven Reactor Feed Pump (TDRFP) to the Motor Driven Reactor Feed Pump (MDRFP), Unit 1 was manually scrammed due to decreasing reactor water level. Reactor Water Level had decreased to approximately 20 inches, and was continuing to drop even with the indicated MDRFP discharge flow meeting the expected demand.

Troubleshooting determined that the 1A TDFRP discharge check valve 1FW001A had stuck open, causing the flow from the MDRFP to circulate back through the 1A TDFRP preventing it from reaching the reactor vessel. The cause was determined to be internal binding.

Corrective actions were to inspect and repair 1FW001A, and to schedule inspections on similar check valves on both Units. Additionally, vendor recommended enhancements identified during the investigation will be incorporated for these valves.

PLANT AND SYSTEM IDENTIFICATION

General Electric - Boiling Water Reactor, 3489 Megawatts Thermal Rated Core Power

A. CONDITION PRIOR TO EVENT

Unit(s): 1 Event Date: 11/27/03 Event Time: 0052
Reactor Mode(s): 1 Power Level(s): 020
Mode(s) Name: Run

B. DESCRIPTION OF EVENT

On 11/27/03, Unit 1 power was being decreased in order to remove the main turbine generator from service to repair a hydrogen leak. At approximately 20 percent power, during the transfer from the 1A Turbine Driven Reactor Feed Pump (TDRFP) to the Motor Driven Reactor Feed Pump (MDRFP), reactor water level started to decrease. At 0052, with the MDRFP indicating maximum flow and reactor water level at 20 inches and continuing to decrease, the reactor was manually scrammed.

Following the scram, the operators secured the 1A TDRFP in accordance with procedure. When the 1A TDRFP discharge isolation valve was closed, feedwater flow from the MDRFP was restored to the vessel.

Investigation determined that the 1A TDRFP discharge check valve 1FW001A had stuck open, which allowed the flow from the MDRFP to circulate back through the 1A TRDFP, preventing feed flow from reaching the reactor vessel. The recirculation path was closed when the discharge isolation valve was closed, and feed flow to the reactor vessel was restored.

This event is reportable under 10 CFR 50.72(b)(2)(iv)(B) and 50.73 (a)(2)(iv)(A) as an event or condition that resulted in the manual actuation of the Reactor Protection System. An ENS notification was made at 0224 CST on 11/27/03.

C. CAUSE OF EVENT

The root cause of the failure was inadequate design. The cross-section of the integral over travel disc stop contact surface, due either to original casting or excessive final grinding during manufacture, was reduced to the point that the disc stop would strike on the angled surface of the seat ring rather than the flat area. This imparted a lateral force to the disc that resulted in binding between the disc hinge ears and the seat ring hinge ears (See Figure 1).

A contributing factor was that the check valve cushioned back stop was missing. The cushioned back stop is designed to give the disc a push closed on vertical installations of the check valve. Although the check valves at LaSalle are installed horizontally, the cushioned back stop could have stopped the disc when swinging open without the disc stop impinging the seat ring. The apparent cause of the missing cushioned back stop was a failure of the tack welds that held it in place.

Other Crane tilting disc check valves that are potentially affected are the discharge check valves for the TDRFPs and MDRFPs on both Units, and the Condensate Booster Motor Driven Reactor Feed Pump supply bypass discharge check valves on both Units.

D. SAFETY ANALYSIS

The safety significance of this event was minimal. All control rods fully inserted and all systems responded as expected to the scram. The Emergency Core Cooling Systems (ECCS) were not challenged. The loss of reactor feed water flow is an analyzed event. The likelihood of a severe accident does not increase as a result of this event.

This event does not constitute a scram with loss of normal heat removal, because feedwater flow from the MDRFP was restored by the control room operators when the 1A TDRFP was secured per post-scram procedures. Neither Reactor Core Isolation Cooling (RCIC) nor ECCS actuated or were required to recover reactor water level.

E. CORRECTIVE ACTIONS

1. TDRFP discharge check valve 1FW001A was inspected, and new hinge pins and a cushioned back stop were installed prior to the restart of Unit 1 on 11/28/03. This action is complete.

2. The integral over travel disc stops for the TDRFP and MDRFP discharge check valves on both Units (1/2FW001A/B and 1/2FW002) and the Condensate Booster Motor Driven Reactor Feed Pump supply bypass discharge check valves on both Units (1/2FW023) will be inspected for proper contact with the seat ring. Where necessary, the assembly will be replaced, or the contact surface area of the disc stop will be increased using weld build-up in accordance with vendor recommendations (AT#188345-29 to 34).

3. The design of the cushioned back stop for the affected valves will be revised to incorporate vendor configuration enhancements and to revise the weld configuration and size (AT# 188345-35, 36).

F. PREVIOUS OCCURRENCES

A search of LaSalle Licensee Event Reports found no previous occurrences of stuck open feed pump discharge check valves.

G. COMPONENT FAILURE DATA

Crane 24 inch Tilting Disc Check Valve, Model 973A.

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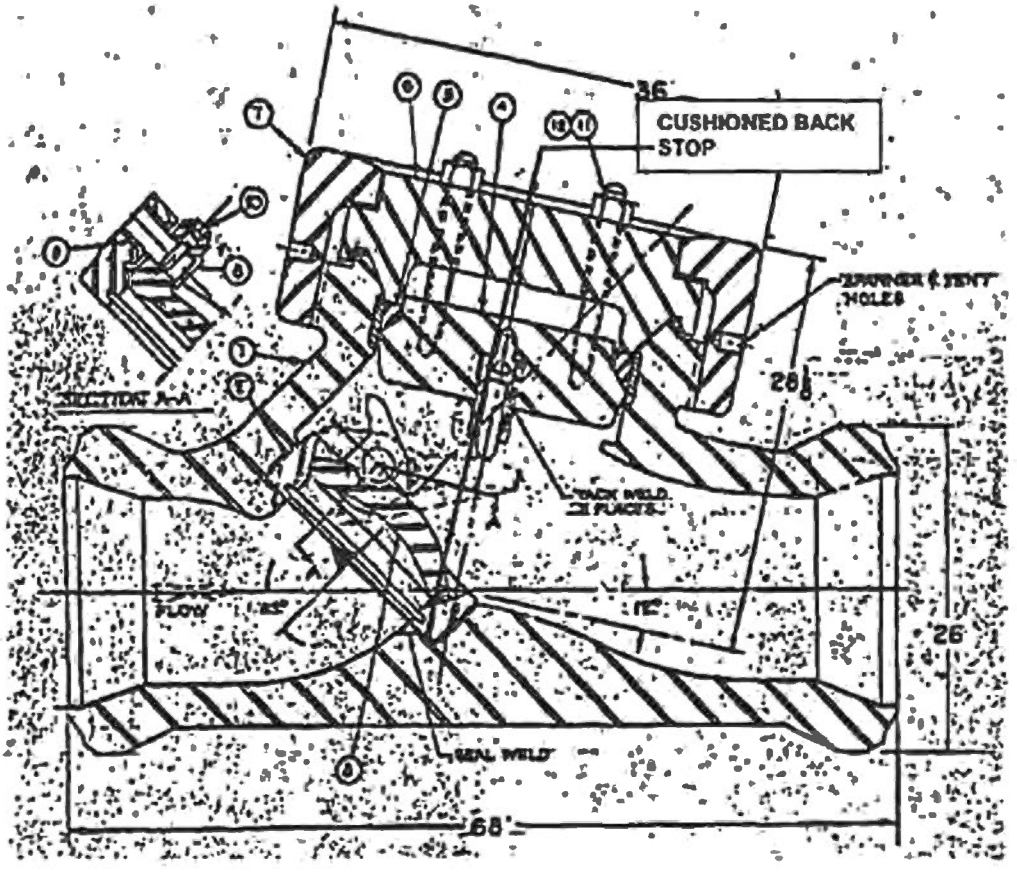
17. NARRATIVE (If more space is required, use additional copies of NRC Form 366A)

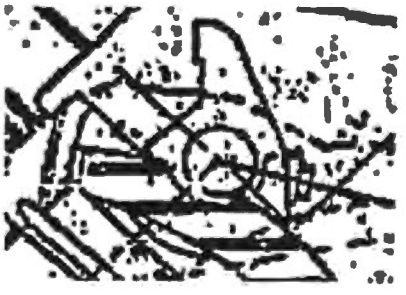
Crane Model 973A Tilting Disc Check Valve

Figure 1



Check Valve Assembly

Cushioned Back Stop



Over Travel Disc Stop